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ABSTRACT

Design, application, and interpretation of a three-tiered sampling framework as a strategy for eliciting public participation in planning and program implementation is presented, with emphasis on implications for federal programs which mandate citizen participation (for example, Level B planning of Water Resources Planning Act, Federal Water Pollution Control Amendments). The three-tiered survey procedure was used in the Lake Champlain Basin Study, which dealt with development and implementation of long-range programs for conservation and development and use of water and land resources in a mixed rural/urban area of uneven socioeconomic status. Study goals were a broader data base, a representative basin constituency, and identification of and relative importance of basin issues; the tiers were high school, key informant, and organizational surveys. The seven basic categories of environmental concern ranked by respondents were land use, wetland issues, water pollution, socioeconomic issues, recreation, energy, planning/management. Results show that the research design gave representative groups a systematic opportunity to respond to issues and that the public did respond and rank priority issues. It is predicted that treating informant groups as constituencies will achieve a new dimension of coordinated integrated planning, which addresses the real complexities of preparing environmental plans likely to receive public understanding and support. (RS)

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The Assessment of Public Issue Perception: Exploration of a Three-Tiered, Social-Network Based Methodology in the Champlain Basin

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A paper prepared for the Annual Meetings of the Rural Sociological Society
San Francisco, California
August, 1978

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ABSTRACT

An increasing utilization of strategies which call for public participation in planning and program implementation characterizes recent Federal legislation. Environmental concerns, especially as expressed in the Level B planning efforts of the Water Resources Planning Act (1965 PL-89-80) and the Federal Water Pollution Control Amendments of 1972 (PL 92-500) present a series of difficult problems when one attempts to implement representative public participation. In a recent study focussed upon Lake Champlain Basin communities, the authors designed a three-tiered survey procedure as one method for gaining citizen input at the initial stages of a Level B environmental planning effort to assess the long range needs of conservation along with development and utilization of water and land related resources in the Basin. Under conditions of limited research funding and time constraints, a strategy for gaining access to the perceptions of three representative social networks in the Basin was pursued. This report focuses upon the difficulties and procedures encountered in design, application, and interpretation of a three-tiered survey approach.

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I. INTRODUCTION

"In illuminating the continuing role of human factors in environmental change, such a history would make clear the many beneficial as well as injurious aspects of man's interventions in his environments. Thus he has built dams to control floods or turn water wheels, cleared forest to provide arable land or pasture, mined the earth for metals and for fuel, and constructed roads and irrigation systems!" (The National Academy of Science, 1973: 1)

The dawning realization of an increasing imbalance in man-nature relationships constitutes a most recent structural bind in the course of human progress. A concerned and responsive branch of the natural sciences has long developed and articulated an ecosystem orientation in which the essential relatedness of all things to one another is set forth. However, the critical development of a sustained social science focus upon the nature of the social institutions and decision making which precede man induced environmental change has not enjoyed the smae consistency of focus. The study of human ecology has ebbed and waned through the decades such that the availability of knowledge about the environment outpaces the ability of a human ecological perspective to encompass such information into a comprehensive frame of reference.

Human ecology is essentially concerned with the adjustments of human beings to their envrionment, especially their natural environment (Klausner, 1971). These adjustments generally occur at two levels. The first is the individual level and the second is the group, organizational, or institutional level. No environmental action or response is taken without individual involvement. However, isolated individual involvement does not have sustained collective impact unless it has an organizational or institutional base to anchor and/or launch its special interest focus (Weber, 1947).

> In a society heavily committed to specialization, the competition for priority attention of any arena is rather fierce. The likelihood that an arena as broad and complex as the ecosystem will merit sustained attention on its own is slim. The very complexity of the environmental totality prohibits the emergence of a human political advocacy group. While there have been individual spokespersons, such as Teddy Roosevelt, Gifford Pinchot, and John Muir, in the past, who played major roles in landmark legislation -- such as that which set aside vast areas of unspoiled land as national parks, forests, and preserves -- advocacy for the environment has not been characterized by a sustained, readily identifiable, financially sound and politically stabel constituency (Institute for Government Research, 1977).

In spite of a trend toward societal specialization (well supported by an ever-growing technological, physical, and natural science information base), significant social phenomenon reflecting emergence of comprehensive concern for human impact on the ecosystem has been witnessed in recent years. For example, early in this decade the "environment" became the theme of campus "teach-ins". In April 1970, thousands of Americans from all walks of life participated in Earth Day with hopes of raising public awareness of growing environmental crises. Sustained efforts were evidenced by nation-wide attention to Sun Day in May of this year, a mobilization which symbolized a nation-wide social movement of environmental constituents (National Academy of Sciences, 1973).

From the first nation-wide stirrings of environmental consciousness in 1970, a broad based movement now exists which provides consistent advocacy for a host of specific issues, each requiring an increasingly sophisticated conceptual orientation with the proven capacity to relate micro-level events to the macro features of potential impact upon the

ecosystem. Thus, we are witnessing the dawning of a unique age of environmental sensitivity. This is a sensitivity characterized by a new level of consciousness for both the intended and unintended environmental impacts of a host of social, political, and economic actions (Council on Environmental Quality, 1973). Moreover, this level of awareness and concern has rapidly become institutionalized in agencies of government. It is further evidenced by new and expanded programs of study and research at universities.

This increased institutionalization of an ecosystem perspective, however, has led to an expressed concern for the capacity of local decision makers to exercise sufficient control over environmental changes.

In a nation heralded for its tenets of democracy and freedom, traditional New England concepts of citizen participation through town meetings, community and county governments has been a viable notion. Many observers feel that this traditional form of activity has fallen into disuse. One major reason cited for this state of declining local activity is the heavy dependence upon the representative form of government at state and national levels. It is contended that the general citizenry have come to depend upon their elected officials to safeguard their interests. Another reason cited is the massive centralization of information in the society. It is argued that the totality of ecosystem fragility can only be understood by those who can master the complex natural and physical scientific materials which describe the total situation (Marx, 1970; Goodman, 1976). Yet another argument contends that, while many citizens understand the issues, they find it difficult to define political action that is compatible with their attitudes toward existing institutions (Bowman, 1977).

In short, comprehension of complex environmental issues has been presented as a complexity which may lie beyond the capacity of ordinary citizens to pursue intelligently.

One other factor which dissipates action on the part of the local citizenry is the proliferation of specialized agencies of government charged with safeguarding the environment. Such vertically structured agencies continually face the problem of response to local issues. Moreover, agency officials must respond to these issues in such a fashion as to avoid alienating the inhabitants of the locale. Concurrently, they must struggle to offset the erosion of credibility created by delayed response to public needs and closed decision making processes. Simultaneously, they must maintain liaison with powerful special interests who apply pressure from other directions. Hennegin sets forth several salient observations on the political nature of this issue when he calls attention to the fact that the one-man, one-vote procedure urbanizes political control, moving it even further from rural environmental locations. Moreover, he notes that there is an increasing delegation of authority and responsibility to bureaus, agencies, and departments of government. An important result of this twin phenomena is to place effective controls out of the reach of local people (Hennegin, 1977). In terms of accountability, however, Hennegin points out that the appointed (or elected) officials must walk a careful tightrope between agency activity and local concern.

In recent years there has been an implicit strategy developed to share the burden of accountability. This strategy first emerged when Federal legislation mandated that representation of the local citizenry be part of program design and thus problem definition (Cobb, 1972). Such

a phenomenon was most clearly demonstrated in the War on Poverty programs (such as Model Cities and Community Action programs) where representation of those most likely to be affected -- the poor -- was implemented (see discussion by Arnstein, 1969, among many others). In spite of the fact that this strategy met strong resistance in many quarters, the notion of mandating citizen participation in other congressionally sponsored Federal programs has gained prominence in the past decade (Magida, 1976).

The 1972 amendments to the National Water Quality Act provide a case which ties the participatory strategy specifically to environmental issues. It states "Public participation in the development, revision, and enforcement of any regulation, standard, effluent, limitation, plan, or program established by the administrator (of Environmental Protection Agency, hereafter EPA) or any State under this act shall be provided for, encouraged, and assisted by the Administrator and the States (The EPA, June 1976: 1).

The logic of encouraging public participation in sensitive and value-laden issues such as those which arise in the environmental area is axiomatic. It is clearly safer to obtain public input in defining the priority nature of problems (and their potential solutions) before the fact than to try to generate their approval and support after the fact (Sewell and O'Riordan, 1976).

Obviously, the implementation of a strategy which encourages public participation in the definition of environmental issues and, subsequently in the articulation of programs which seek public involvement in the planning and solution of said issues, is of keen interest to those who

profess adherence to the study of human ecology. It is precisely at this point where we, as social scientists with a human ecology perspective, can play a critical role. A situation arose recently where the authors had the opportunity to apply social science methodology to the citizen participation process in identification and ranking of environmental issue severity. (This activity was pursued in the context of a large lake basin area) In the following sections, discussion provides details as to the context in which this study was conducted, a review of alternative methodological strategies, a rationale for the final field strategy employed, and an assessment of the strengths and weaknesses of the design.

II. PROGRAM CONTEXT AND ENVIRONMENTAL SETTING

The states of Vermont and New York, along with the federal government embarked on a two-year study of the Lake Champlain Basin in the Spring of 1977. The study, referred to as the Lake Champlain Basin Study, was the product of many years of debate centering upon precisely the kinds of environmental issues discussed above. Specifically, these dealt with development and implementation of management programs for the Lake, its accompanying shoreline communities, and the larger watershed area.

Lake Champlain is sometimes referred to as the smallest of the Great Lakes because it is the sixth largest body of fresh water in the United States. Over one hundred miles long and twelve miles across at its widest part, it is both an interstate and international body of water with 62% of its surface area in Vermont, 35% in New York, and the remaining 3% in the Province of Quebec, Canada. The Lake's drainage basin contributes to the St. Lawrence River Basin via the Richelieu River, and encompasses an

area of 8,234 square miles, nearly the size of the entire land area of Vermont. Within this Basin area, all or portions of two countries, two states, twenty-two counties, and 160 cities and towns comprise the political boundaries. Almost half a million people inhabit and depend upon the resources of the Lake Champlain Basin. (See Figure 1)

Although the population is fairly well distributed throughout the Basin, growth has been very uneven. Notable decreases occurred in three of the counties, between 1960 and 1970, indicative of a long term out-migration trend in rural areas of the Basin. So too, extremes in socio-economic status are found between the more rural areas and the urban centers. The number of families below the poverty line in 1970 runs from zero in certain communities to as high as one-third in others. Median family income is under $5,000 annually in some areas and runs as high as $13,874 in the more affluent areas of Chittenden County in Vermont. The median number of adult school years completed shows similar disparities, running from as low as 8.5 years completed in some areas to 13.2 in some of the college towns. Investigators could clearly anticipate a variety of issues and orientations to environmental concerns in an area so diverse.

The Basin Study, which officially began in April, 1977, was supported by a grant from the U.S. Water Resources Council with contributions of in-kind services from the states of New York and Vermont. In the design of the Lake Champlain Basin Study, early consideration was given to the inclusion of a viable componenet for citizen aprticiaption in its responsibilities associated with Section 208 of the Water Quality Act. This section, under the authority of Section 101(e) (Water Quality Act of 1972),

contains a clear mandate for public involvement in the identification of water quality problems in the Basin and development of a set of coordinated planning activities in order to seek problem resolutions.

The Lake Champlain Basin Study entered into a contract with the authors who represented a consortium of consultants from Cornell University, the University of Vermont, and The State University at Plattsburgh, Institute for Man and Environment at the Miner Center. The commitment of this team was to plan, organize, and implement a three-tiered series of survey activities. This research design was not, however, without precedence in the social science literature. The three tiers of the Study are briefly identified as follows:

> Tier I -- The first activity involved the design and implementation of a survey to elicit young people's perceptions of water qualtiy and related needs and issues in the Lake Champlain Basin Area. The sample population selected for this purpose was sophomore and junior high school students. All high school districts within the Basin were included in the sample population. (An additional feature of the first tier was to request each high school sophomore and junior to take one copy of the survey form home for parents to complete).
>
> Tier II -- The second tier of the survey activity involved a "key informant" approach. Here, the intent of the research was to observe where people frequently congregate or exchange information and to tap the tenor of that information as it pertained to the Lake Champlain Basin Area. Interviews were conducted with respondents who were operationally defined as people who, because of the positions they occupy, come to possess a considerable range and depth of knowledge about ongoing events or activities of interest which are exchanged through shared converstions or gained through direct experience. It was assumed that key informants would act as spokespersons for the area residents and not simply report their personal perceptions, opinions, or behaviors (Francis and DeLuca, 1976: 5). Shoreland towns and major population centers in both Vermont and New York

constituted the level of analysis for these key informant interviews.

Tier III -- The final tier of survey activity was designed to tap information from those persons in the Basin who are the officers or leaders of organizations, either private or public, with established names and addresses. Organizations with interests associated with issues or activities connected with the Lake Champlain Basin Area were sought. The purposes of tier III activities were threefold:

a. to identify organizations agencies, and associations throughout the Basin which have an active interest in Basin-wide issues and problems;

b. to determine what each of these organizations perceived to be the major priority issues and problems, and;

c. to discover what specific forms of action these organizations and agencies are undertaking concerning the issues and problems.

Discussion will return to a more comprehensive exploration of activity at each stage of the three tier study momentarily. Let us now briefly consider the methodological precedents for such an activity.

III. METHODOLOGICAL REVIEW

Enlightening commentary on the subject of environmental perception is found in the work of David Lowenthal. Lowenthal has extensively explored techniques such as environmental simulation and environmental surrogates which rely heavily on the use of photographs and models in work with local audiences. Shafer has employed similar techniques (1969). Lowenthal points out that these techniques often fall short because they lack commonly accepted definitions, objectives, and mechanisms for applying research results to the needs of environmental planning and decision making (1972). One difficulty expressed with environmental perception research is the

ability to generalize reliably from the population or issues involved or to have confidence in the length of time for which the perceptions are valid.

Many researchers in the field have usefully combined other approaches usually referred to as macrodata techniques. These techniques use some or all of the community as the unit of analysis. Macrodata are particularly suited to the measurement of environmental conditions (Cornell Symposium, 1975: 19).

Notable among the macrodata researchers is Lester Milbrath at the Environmental Studies Center of Buffalo State University who has developed a number of useful scaling techniques for the description and categorization of environmental perceptions. Milbrath describes his techniques as follows:

> People can report in a fairly straightforward way how they evaluate the quality of various elements of their environment. These evaluations can be scaled and compared across environmental factors for an individual, aggregated for a community, compared across communities, and compared over time for individuals or communities (Milbrath and Sahr, 1975).

Researchers who have explored both perceptual and structural techniques in the measurement of environmental issues include Capener, Francis, et. al. This team utilized key informants and documented events to identify and rank the environmental issues in the Hudson River Region (1974, 1977). Gore, Wilson, and Capener also sample surveyed residents of three rural watersheds in central New York to document concerns about water quality and predispositions to undertake remedial actions.

Other studies, such as the one conducted by Borton and Warner in the Susquehanna River Basin (1971) have surveyed public officials and agency representatives to obtain perceptions of local environmental conditions. Their conclusions point to the need for the development of expanded survey

techniques which tap the general public (in addition to local leaders) in order to add more representative, comparative, and corroborative dimensions. (Borton and Warner point to a strong link between the provision of adequate information and the ability of the public to come to conclusions concerning those technical subjects often associated with environmental issues.) In the past, participation in environmental issues has been confined almost exclusively to the middle class (Burch, 1971). This has been blamed on the presence of a "silent" majority who may not participate because they lack adequate information and knowledge (Erickson, Cordell, and Davis, 1976).

Evaluation of the previous attempts at public participation have brought to light the fact that those attempting to involve the public in decision-making seldom know how to do it effectively. Stankey, et. al. feel that the answer to many of the problems which plague citizen participation can be summed up as follows: "Creative thinking and research should provide original or refined conceptual framework, philosophies, procedures, and techniques to make possible a better job." (Stankey et. al., 1975: 72)

IV. DEVELOPMENT OF THE THREE TIERED DESIGN

As indicated above, the planning approach for the Lake Champlain Basin Study reflected a heavy committment to citizen participation. Concern was expressed that such citizen activity occur at the very outset of issue definition. Typically, natural science interests dominated the overall study group. As a contract team, it was anticipated that the social scientists would draw a representative issue "sampling" from the half million inhabitants of the Basin. However, the level of available funding limited

activity to the USDA equivalent of one average salaried "scientific-man-year". Moreover, time constraints limited field work and data collection to a single summer, with fall semester, 1977, allocated for analysis. The "field" as indicated above stretched from the Canadian border to the central Hudson Valley with a breadth of over a hundred miles. The situation clearly called for utilization of the "tried and true" traditional research techniques along with any original or creative thought that the exigencies pf the research and field situation could meaningfully accomodate.

The strategy underlying the development of a three tier survey design was based upon a fundamental assumption of human ecology which posits the presence of a variety of different social strata bounded by natural environmental and economic contexts. Through the construction of socio-economic profiles of Basin communities prior to the initial design of a sampling strategy, It was hypothesized that perceptions of environmental issues could be obtained in a fashion which addresses the bias toward those citizens who most visibly articulate local issues found in other perception research. Thus, it was a major premise of this work that three very different social networks could be surveyed in the allotted time. To accomplish such an ambitious effort, several survey techniques were employed. The combination of macro and micro foci, community profile construction, and perception survey all drew heavily upon the experience of various researchers of environmental issues.

Each of the three tiers was designed and selected to highlight early in the planning effort the perceptions, attitudes, and beliefs held by different resident networks in the Basin regarding current and future environmental problems, needs, and issues (see Figure 2).

V. IMPLEMENTATION OF THE THREE TIER DESIGN: PROCEDURES AND ANALYSIS

In the following comments, specific procedures and problems encountered at each tier's implementation are briefly presented and discussed. Each level of activity is further analyzed as to its viability. Detailed discussion of the design utilized is provided with the intent that analysis of its feasibility should prove useful to others who embark on similar ventures.

A. Tier I: The High School Survey

As discussed above, the high school survey represented the first of a three-phase project to contact citizens who live in the Lake Champlain Basin to measure their perceptions of the existence, intensity, and range of lake-related problems and issues. High schools were chosen for this first method of obtaining a "broad brush" reflection of young peoples' perceptions. The schools provided an opportunity to reach a large and representative segment of youth who shared a common meeting place and who could, in turn, distribute duplicate copies of the surveys to their parents.

A.1. Procedures and Survey Design

High school sophomores and juniors comprised the primary target at Tier I. Sophomores and juniors were chosen primarily on the basis of their continuing availability, first as initial contacts and then as a potential population segment constituting a follow-up sample. These students had the potential to become part of a constituency for dispersing information throughout the Basin. It was felt that seniors were likely to be preoccupied with graduation, college entrance, and seeking employment. Moreover, seniors are much more likely to be geographically mobile and thus, as a group, lacked the permanence desired for establishing the foundation of

an information network.

The high school sample offered the potential of obtaining survey information from a total of 73 high schools (31 in New York and 42 in Vermont). These schools represented all those located within the geographic area of the Lake Champlain Basin. The total number of sophomores and juniors enrolled in these 73 high schools was just over 18,000 in the spring of 1977.

The identification and location of the 73 high schools in the Basin was the first step in the distribution of the High School survey. Each school administrator was sent a form letter which explained the scope and purpose of the study. In addition to the introductory letter, a number of the administrators were contacted by phone as a reminder that the staff members would by arriving within a few days. Unfortunately, many of the administrators contacted had either not yet received the advance letter or had not read it. Because of several awkward initial experiences between staff and school officials, it was decided to forego telephoning beforehand. Meeting face-to-face with the administrator resulted in greater cooperation.

The trained field staff delivered the surveys personally to high schools to insure comprehensive explanation of survey intent and proper administration (see Figure 3, sample survey form). Field staff recommended that the survey be administered in the homeroom setting whenever possible. (Where this was not possible, the surveys were placed under the supervision of a department or program head for distribution.) Regardless of who was designated to administer the surveys in each school, written instructions were included in each package.

An attempt was made to have Field Staff return to as many schools as

possible to retrieve the surveys. Administrators were provided with pre-addressed, postage-paid envelopes and asked to group mail the surveys to the Lake Champlain Basin Study office. All contacts with school officials were recorded.

The survey instrument was designed to elicit both unstructured and structured responses. The former responses were collected by providing three blank spaces in which the respondent could record his/her perceptions of environmental issues. The structured responses were collected employing a predetermined list of seven perceived issues which may not have been chosen by the respondents in their initial responses. The seven issue areas were carefully selected by the Survey Team in concert with Lake Champlain Basin Study staff and other knowledgeable consultants (see Figure 4). Space was provided for open ended response. The respondents were next asked to rank order their own as well as the seven listed issues. Finally, respondents were instructed to complete a section in which they were to note evidence (or examples) for each of the top three issues according to their ranking.

On the reverse side of the survey, respondents were first asked to indicate any organizations they were aware of that were dealing in any way with the problems or issues relating to the Lake Champlain Basin. The remaining five question dealt with general identification topics such as school names, class status of student (sophomore or junior), town of residence, and sex of respondent. A space was also provided so that respondents who wished to receive feedback on the survey or general information on the Study could indicate their name and address.

Each survey contained a map of the Lake Champlain Basin Area to assist the respondent in understanding the geographic area covered by the

Study and to enable them to locate their own community within the context of the Basin. Town boundaries were indicated and major population centers were labelled.

A.2. Critique of the High School Survey Procedure

The high school survey was hampered from the outset by the constraints of time. This phase of the project was not approved until early May, which meant the research team had less than a month before the schools would close. The busy school schedules in May -- finals, graduation exercises, Regents' Examinations, and budget preparations for the '77-'78 school year -- introduced more of an obstacle than anticipated and much of the lack of cooperation at this level can be attributed to difficulties related to school's end.

It was also apparent that schools located on the periphery of the Lake Champlain Basin generally had a difficult time conceiving how their geographic area was relevant to the Lake Champlain Basin Area. The administrators or teachers of these schools expressed more negative sentiments about the students' (and parents') ability to incorporate lake-related concerns with the indigenous problems and issues and still produce coherent statements.

In addition, the survey staff were often warned to expect low response rates because of the low socio-economic status of the families living in certain school districts. Administrators generally had a low assessment of their students' awareness, especially relating to Lake Champlain. This is not to say that administrators in these areas were uncooperative; they were generally as cooperative as any of the other schools. (Unfortunately, the potential for tapping an adult dimension of perception through take-home

questionnaires from the high school sophomores and juniors was not met in any area.)

From the surveys returned, a precise pattern of the procedures used for distribution and administration within each and every school is not clear. (There is evidence that individual teachers in some departments played key roles in support of our survey.) It seems likely that a few teachers may have directed their students' answers. Generally, schools that placed the responsibility of distribution on one particular department or curricular clusters (as opposed to the homeroom format) exhibited a rather haphazard pattern of completion, both in terms of total response and in the quality of the comments. In the future, researchers would be well advised to request administration of such surveys through relevant academic programs.

Although the survey instrument was pre-tested and laid out in a logical sequential pattern, the evidence is strong that many high school sophomores and juniors still had difficulty in understanding and following directions. Overall, the response rates from the students were suprisingly low. The inconvenient timing of the survey is seen to be a crucial factor. In Tables 1 and 2 the data on the number of high schools contacted, the potential number of sophomores and juniors involved and the numbers and percent of returns are presented.

In spite of the disappointing return rate, just under one-third, the first tier of the Public Participation Survey aimed at identifying students' perceptions of the problems and issues in the Lake Champlain Basin Area was termed moderately satisfactory. The following summary observations were made:

1. The overall level of participation of the high school students fell below expectations. The reasons for this had to do primarily with the late timing of the request which interfered directly with the end of the school year activities. The response rates were higher where the school principals or teachers were cooperative, confident, and saw the survey as being relevant to their curriculum or program interests.

2. The response rates were higher where systematic programs of environmental study had been incorporated in the curriculum and where teachers' and students' awareness and interests had been heightened. The students who had been recipient of systematic environmental training in their schools were most aware, informed, and expressive of interest and concern.

3. Of the 73 high schools in the Basin area there were 24 which were, for one reason or another, unable or unwilling to cooperate on the survey. Of the remaining 49 schools, the total number of sophomores and juniors enrolled was 13,010 and of this number 4, 023 or 30.9% actually responded.

4. The major question being addressed in the survey was the identification of the issues or problems. The findings clearly show water pollution, general social and economic conditions and wetlands to be the top three concerns in that order. There is some variation in the ranking between New York and Vermont students on the importance of the remaining issues but in the overall Basin area rating, energy, land use, recreation, and planning and management are listed in that sequence. Many of the students cited evidence and examples of problems or conditions that are associated with the issues.

5. There is strong evidence that the students are conditioned with the worry and concern of their parents about the general economy of the area and the availability of jobs and employment.

6. Overall, the student survey represents a solid input of views of young prople in the age range of 15-17 years old. The data, of course, should be reviewed in context along with that anticipated in Tier II and Tier III of the survey before any final definitive conclusions are drawn.

7. The number of students who signed their names and indicated a desire for feedback was encouraging. These students and their schools could become an important network for information sharing and exchange.

Another indication of the extensive interest the students had in the Basin comes from some direct quotation they made on the questionnaire.

- "There should be something to make the people realize that Lake Champlain is part of their country and it shouldn't be abused. There should be more publicity about the Lake Champlain Basin problems. If the people and industry won't stop abusing it, the area should be closed off, maybe then they'll appreciate it."

- "I feel the main problem in the Basin is unemployment. While the main interest may be pollution and I agree that it is a problem still there are more important things, people are having to move out of the area to find jobs."

- "There is constant need for jobs. Maybe by preserving our Lake we can insure jobs for the future generations."

- "I don't like to swim in the Lake when there are so many dead and smelly fish floating around."

- "You can't boat or swim in any of the shallow areas of Lake Champlain because there are so many weeds."

These comments reveal an insight and understanding that the students have of the balance that must be drawn between protecting the environment and maintaining economic activity. A similar sense of balance was gained from the dey informants who were interviewed in the next phase of the research.

B. Tier II: The Key Informant Survey

B.1. Procedures and Survey Design

This segment of survey operations was aimed at eliciting responses from a cross-section of residents in the Basin who, by virtue of the positions they occupy, are in the middle of typically unrepresented social

networks. Examples of such individuals are general store and hardware store and gas station operators, pharmacists, and bartenders. Other similar service personnel who meet and talk to a number of people and who transmit information are barbers, postpersons, diner and beauty shop operators, insurance workers, and other business persons. For matters of convenience, the townships were identified as comparable units for tapping the networks represented by these positions in both Vermont and New York.

Because of budget and staff constraints, only those towns adjacent to the shores of Lake Champlain, Lake George, and the major population centers (cities) not located in the shoreland towns were included in the study sample. The result was 23 shoreland towns and one major population center in New York. In Vermont, 25 shoreland towns and four major population centers were included. It should be noted that past research has shown that immediate proximity to the shorline does not have a significant influence on residents' perceptions of local problems and issues (Gore, Wilson, and Capener, 1975).

The next task was to develop ratios for final selection. A formula of four contacts per town, plus one extra contact for every 1,000 persons in the shoreland towns, was decided on. For the major population centers a standard four contacts were made. Table 1 illustrates the total 375 interviews distributed by town.

In order to insure that one position, e.g. grocery store operator or barber, were not the first persons contacted in each town, a rotational list was used by each staff interviewer to insure that a cross-section of the positional informants were included in the sample. Once an initial contact was made and an interview completed, that person was then asked

to recommend other knowledgeable people in the area. This is called the "snowball" procedure and the interviewer uses it until the quota of responses are obtained from among the types of key informant positions identified (Seidler, 1974: 819).

All key informant schedules were completed by personal interviews carried out by field staff, especially trained in using this technique. At the conclusion of an interview information was distributed. In addition, maps of the Basin were distributed as well as mail back postcards for requesting further Study results.

All of the projected sample interviews were completed and processed for each of the selected Basin communities (see Table 3).

B.2. Critique of the Key Informant Tier Survey

A total of 375 interviews were completed. Informants generally showed a keen interest in various aspects of the Study. Over two-thirds indicated an interest in learning more about the results (see Table 4).

The key informant technique proved to be an effective method for obtaining interviews. Upon completion of the survey form, other referrals were easily obtained for those occupying identified postions in each town as well as a wider array of persons identified by the respondents as being knowledgeable people from whom information could be obtained.

The overall success of the initial contact/referral technique can be seen in the distribution of the successfully completed interviews. In both New York and Vermont, over five times as many interviews were derived from the key positions sought out in each town as from the general reference sources of other useful informants (Table 5). The results seem to suggest that pre-selecting respondents from key positions is a valid

approach and that persons occupying these positions are accessible and willing to reflect generalized knowledge and opinions.

The majority of the interviews were conducted in the month of July. Virtually all the remaining interviews were completed in August. The matter of seasonality can have an effect on respondents' perceptions and thus on data collected in a survey such as this. A good example is the eutrophication problem in Vermont's St. Albans Bay; a situation so severe that potable water was trucked into the area during August. The interviews were collected during the month of July in the St. Albans Bay area and therefore didn't reflect the intense concern over the issue of eutrophication which arose during the month of August. While no time or seasonal constraint was suggested in the responses, there is a natural tendency for a person to respond within a current frame of reference. Obviously, the longer the seasonal span covered by the interviews, the greater the chance for problems unique to a given season to be highlighted.

Because the snowball interview technique tends to have a built-in bias toward particular referral networks, the representative features of the key informants who responded to this phase of study activity are briefly discussed.

In terms of sexual characteristics, a ratio slightly under 2:1 favoring males emerged from completed interviews. This was largely due to the fact that males are more likely to occupy the key positions sought out in each town for interviews (Table 6).

In examining age distribution, one would expect the informants to be heavily representive of those in the active working age range. Indeed, this proved to be the case. (A higher percentage of key informants was

sampled in the 40-64 age range in New York than occurs in the general population although the reverse was true in Vermont.) In both state sample groups, those over 64 are underrepresented in the sample. This is explained by the fact that the respondents were interviewed at their jobs. One would not necessarily expect those over 64 to be significantly represented in the working population (see Table 7).

The length of time the respondents had lived in the area yields a good cross-section of residential experience and familiarity with the issues in the Basin. Newcomers with less than ten years length of residence constituted nearly a quarter of the sample. The distribution of the others in residence from one to six decades provides a relatively stable base from which to share observations (Table 8).

Overall, activity at this tier of the design was most gratifying. Key informants were found to be most willing to cooperate with interviewers, in spite of the fact that many of them were heavily involved in demanding daily routines -- routines where interruption is usually equated with loss of business. The interviewers had the impression that these people were typically not approached concerning issues in survey operations of this type. Their thoughtful responses provided much important perceptual data for the Study. A sampling of comments beyond the actual questions illustrates the depth of their observations.

- "There isn't any business in town and the influx of trailer perks and homes detract from the scenery and don't pay enough taxes. The town is going downhill fast because there is no incentive to stay nor any incentive for anyone or any business to move in."

- "Too much privately owned beach property, and lack of access to the Lake."

- "Farms have shut down because they couldn't afford to stay in business."

- "Too many boats on the water, too many unsafe hunters in the woods, too many tourists don't give a damn about preserving the Lake."

- "Lake level should be left alone, let nature take its course."

- "The water stinks sometimes, probably from sewage and motor boats."

As with the high school students, these comments show that the key informants are concerned that a balance be maintained between economic activity and environmental protection.

C. Tier III: The Organizational Survey

C.1. Procedures and Survey Design

Through a variety of means, names and addresses of the organizations or agencies located in the Lake Champlain Basin Area with interests in any planning for its future were collected. The same basic survey questions and format used with high school students and key informants was used to obtain information from the leaders of these organizations and agencies.

Funding of the project limited the conduct of personal interviews with the organization heads. Instead it was decided to distribute the survey forms and request that they be filled out similar to the mail-back procedure used with the high school students. Several different methods were used to distribute the survey forms to the organizations:

1. The first was to use interns hired by the Regional Planning and Development Commission to work on teh Lake Champlain Basin Study. In Vermont the Commissions representing Franklin-Grand Isle, Chittended County, Addison County, and Rutland County; each sponsored an intern. In New York, the Lake George-Lake Champlain Regional Planning Commission sponsored an intern.
The Regional Planning and Development Commissions are comprised of one appointed or elected representative, called a regional planning com-

missioner, from each of the communities within the geographic area covered by the Commission. Interns were instructed to have each Commissioner fill out one of the Organization surveys, employing a regional perspective rather than a personal or local frame of reference. Whenever possible, the interns hand-retrieved the surveys and returned them to the LCBS Burlington office. All other surveys were mailed back.

Interns were instructed to be sure that each shoreland community and major population center (i.e. Lake Placid, Barre) was covered by asking each Board of Selectmen or Planning Commission to complete a survey form. This was done to assure comparability with data collected in Tiers I and II. Again, whenever possible, surveys were hand retrieved, with the remainder being mailed in. Interns were carefully instructed on distribution and retrieval procedures through a packet put together by LCBS. In order to avoid overlaps with the "Key Informant" survey, interns were instructed to ask the respondent if he/she had already been interviewed. In the event that they had, interns were asked to pick an alternate Selectman or Planning Commissioner. It was estimated that this method of distribution had the potential of contacting approximately 300 persons.

2. The second method of distribution of the Organization Survey enlisted the services of two resource planners who were asked to distibute 15 surveys each to "key" state government officials in their respective states.

3. On September 20, 1977, a Citizen's Forum on the Lake Champlain Basin Study was held in Ticonderoga, New York. At the time that pre-registration materials were mailed out, copies of the Organization Survey were included. Potential Forum participants were asked to fill out the survey and return it to the LCBS Burlington office. This mailing, constituting the third method of distribution for the Organization Survey, contacted approximately 100 groups. (In addition, copies of the survey were available at the Forum for those participants who had not been contacted by the mailing.)

4. The fourth method of distribution was a mass

mailing to all groups, agencies, organizations, etc. that comprise LCBS's master mailing list. This master mailing list was compiled from the Vermont Year Book and from interest group mailing lists which were requested from groups such as the League of Women Voters, the Lake Champlain Committee, the Soil Conservation Service, New York State County Directories, the Lake George-Lake Champlain Planning Commission, and others. The groups on this list were conceptualized as lying in the following categories:

A. Public/Quasi-public bodies or organizations (i.e., Regional and/or local Planning Boards, Boards of Selectmen)

B. Recreation groups (i.e., sportsmen, bird-watchers, boaters, campers, hunters)

C. Public interest groups (i.e., League of Women Voters, environmentalists)

D. Resource Managers (i.e., foresters, agriculturalists)

E. Economic development interests (i.e., Chambers of Commerce, retailers)

F. Private citizens (i.e., those who wrote to LCBS requesting information or offering assistance)

The last category, private citizens, were contacted through this mailing with a somewhat different purpose in mind. In those communities where these private citizens agreed to help, surveys would be distibuted locally rather than by mail from the LCBS office. Each participating citizen would be asked to call or visit the chairperson, president, or executive of identified organizations and explain that he/she is helping the Lake Champlain Basin Study gather public concerns early in the Study process. Using local newspapers, listings of community activities and other available sources these private citizens were also asked to make additions to the list of organizations to be contacted. Such organizations might include local bay or shoreline property owner associations. It was estimated that each of the private citizens contacted could approach from 5 to 10 groups. This method had a two-fold goal:

first, to have community organizations approached by local individuals whenever possible in the hopes that organization ladders would be more responsive than they might be to a mailed questionnaire, and second, to identify and contact smaller, less visible groups who would have been overlooked by the mass mailing.

5. In compliance with the mandates of Section 208 of the Federal Water Pollution Control Act, the Lake George-Lake Champlain Regional Planning Commission has established a 208 Citizen Advisory Board. Members of this board are appointed to represent the interests of both private and business groups in the area under 208 authority. Because the 208 area encompasses part of the Lake Champlain Basin, it seemed logical to use this board as the fifth method of Organization Survey distribution. All those in attendance at the July monthly meeting completed a survey which was explained beforehand by an LCBS staff member.

It was estimated that the combination of all the above strategies had the potential of enlisting the cooperation of approximately 900 organizations.

A deadline for return of all distributed surveys was set for October 15. A follow-up memo was sent to the planning commission interns and Lake Champlain Resource Planners reminding them of the importance of getting the surveys back. All surveys returned to LCBS were turned over to the Public Perception Study Team for tallying and analysis of results.

C.2. Critique of the Organizational Tier Survey

The third tier of the perception study was designed to obtain information from leaders of organizations either in the private or public sector whose purpose and interests would naturally cause them to be concerned with issues associated with the Lake Champlain Basin area. phase of the Study design was the least successful in its implementation for several reasons.

It was not possible within the available resources to conduct personal interviews. As discussed above, a number of distributional means were utilized. In contrast to the first two tiers of the Study, the Organizational Survey was administered and collected directly by the Lake Champlain Basin Study offices.

A meager total of only 57 organizations completed and returned their survey questionnaires. It should be noted that the same questions were asked of the organization leaders as were asked of the high school students and the key informants. The organizational heads were requested to fill out their answers to the questions as spokespersons for the organization as a whole rather than from a personal point of view. This established a parallel procedure to the process used in the key informant survey.

The general distribution of the organizations throughout the Basin area may be seen in Table 9. The organizations are about equally distributed between the states of Vermont and New York and they also reflect a fair geographic representation throughout the Basin area. The concentrations on the Vermont side tend to fall in the population centers. In New York they are more evenly dispersed.

The distribution of the organizations by type in each of the states is seen in Table 9. Here it is apparent that the organizations associated with government comprise over half of those responding. Local government units were represented more frequently than any other group, with state agencies and special interest groups being equally represented. The private sector groups and Federal level agencies are smallest in representation.

In looking at the results from these informants it must be borne in mind that the organizational respondents are largely reflecting the viewpoint of a local government agency.

Another backgroud feature is the fact that a larger proportion of the Lake and water surface is located in Vermont. In addition, more of the special interest groups represented were from Vermont, and the nature of these has more to do with water-related matters. Somewhat in contrast, New York State had more local government planning boards represented which by their nature tend to be broadly preoccupied with the land use, water pollution, and socio-economic development issues. Table 9 lists the names and number of organizational responses by type of organization and by state.

In sum, this phase of the Study represented a most disappointing activity. It is clear that even when responsible organizations are tapped, greater allocation of face-to-face interviewer time must be allowed. So too, the administration of a network of organizations which involves "infiltration" through attending meetings and conferences, although of high contact potential, is extremely time-consuming and requires extensive preparation. While we still feel that the likely payoff (in terms of representing a great number of interests) is high in this type of work, we were frankly naive in seriously underestimating the time required to perform serious and sustained "networking" in order to tap this important dimension of issue perception.

VI. CONCLUSIONS AND GENERAL COMMENTS

In preceeding sections, the separate population segments studied and

an accompanying critique of data collection methods have been presented. Emphasis has been given to reporting experience gained in the design and execution of a three tiered sampling framework. This design had at once the capacity to involve local people in the articulation of their perception of the environmental issues and to establish a viable and representative network for planners to further utilize in disseminating information and implementing programs with local cooperation.

One point highlighted in this conclusion is the number of implications for public planning implicit in the overall Study design. Research activities, in the first place, generated an awareness of the Study's broader mission throughout the public sector of the Basin. Secondly, a consistent attempt was made to share information during the process of interaction with respondents. That is, through the introduction of survey materials, an intentional design was followed which sought to impart an awareness of basic geographical boundaries, political jurisdictions, and demographic attributes of the Basin. Moreover, as a result of the survey activity, a network was set in place through: a) identification of virtually all environmentally related organizational activities in the Basin, and b) interaction with all respondents encouraging them to establish contact with the Basin Study group on an ongoing basis.

It was found that the inclusion of open-ended issue response categories enabled expansion of the basic seven categories constructed by the Study team and the authors. The general conceptual categories were tied to specific respondent initiated examples and locations of most visible environmental issue "sites". Moreover, the seven basic categories of environmental concern were ranked and compared across all three tiers of

respondents. Tables 10 and 11 depict the preliminary findings as each issue area is ranked by each of the three tiers. In the context of the methodological discussion above, the variety of issues as perceived by the different sectors of population in the Basin is fascinating.*

The high school survey Tier I presented a representative perspective of what youths in the Basin Area perceive as important issues; water pollution, socio-economic, and wetland were the three top-ranked issues (Tables 10 and 11). It should be noted that the percentage differences were very close for all of the issues from second to seventh position. This is interesting in its message for the planning priorities. So far as youths are concerned, each of the issues are of sufficient importance and deserve about equal planning attention.

Unlike the youth, the spokespeople in the Key informant survey, representing a cross-section of adult information flows in a community, identified three top issues that stand in a clearly demarcated position with respect to each other. The top concerns were the socio-economic issues, probably resulting from a concern for business and industry in the area and, closely related, the lack of jobs. Water pollution was ranked second. The identification of the socio-economic issues along with land use, the third ranked issue, reflects adult concerns which focus upon home and property ownership, increasing land values, taxes, and rising costs of living. There is also reflected the awareness of growing demands for recreation (both locally and as a function of tourism). The issues of planning and management, recreation, and wetlands followed

* A more thorough analysis of the varying issue responses is not yet available altnough limited copies of an Executive Summary of the report has been published (Capener, Gore, Schmidt, et. al., 1978).

in order as major concerns identified by key informants (see Table 10).

Implicit in the expressed concerns of the adults could well be the growing impact of the recent turnaround in population migration that is bringing people out from the major metropolitan center. In-migrants are seeking the qualitative features of life, the attractions of open space and environmental resources that an area such as the Basin affords. The planning and management issue follows along in this sequence of concern. In a sense, it represents a kind of legitimating message to the Level B planning effort that this function is crucial to the process of resolving the other related issues.

The Basin area results of the Organizational Survey are closer to the overall findings from the key informants than the youth. In fact, the first four issues recognized are the same, although they are given a slightly different priority ranking. It is interesting to note that the last three issues also came out with approximately the same percentage allocation, although the rankings are slightly different. The major differences in the Organizational Survey results are to be found between the two states and are accounted for by the nature of the organizations reporting. Overall, the organizational leaders, as spokespersons for the needs of the Basin Area, confirm reports from the key informants. These results differ mostly from what the youth reported in the high school survey, except on the issues of water pollution and socio-economics (see Table 10).

The message for the Level B planning function gleaned from this type of research design is that when representative groups of the public are given a systematic opportunity to respond to issues in the Lake

Champlain Basin area, they can and will do so. Moreover, when asked to place some kind of priority ranking on the issues, they can do this also. If, in the planning function, frequent reference is made to the expressed concerns and issues identified by these representative segments of the public, then the plans should be more understandable and acceptable. If, in addition, a conscientious effort is made to view and treat these informant groups as constituencies, keeping them appraised of planning and development efforts as they unfold, then a new dimension of coordinated integrated planning could very well be achieved. Such an achievement has implications which address the real complexities of preparing environmental plans in a manner likely to receive both public understanding and support.

Figure 1.

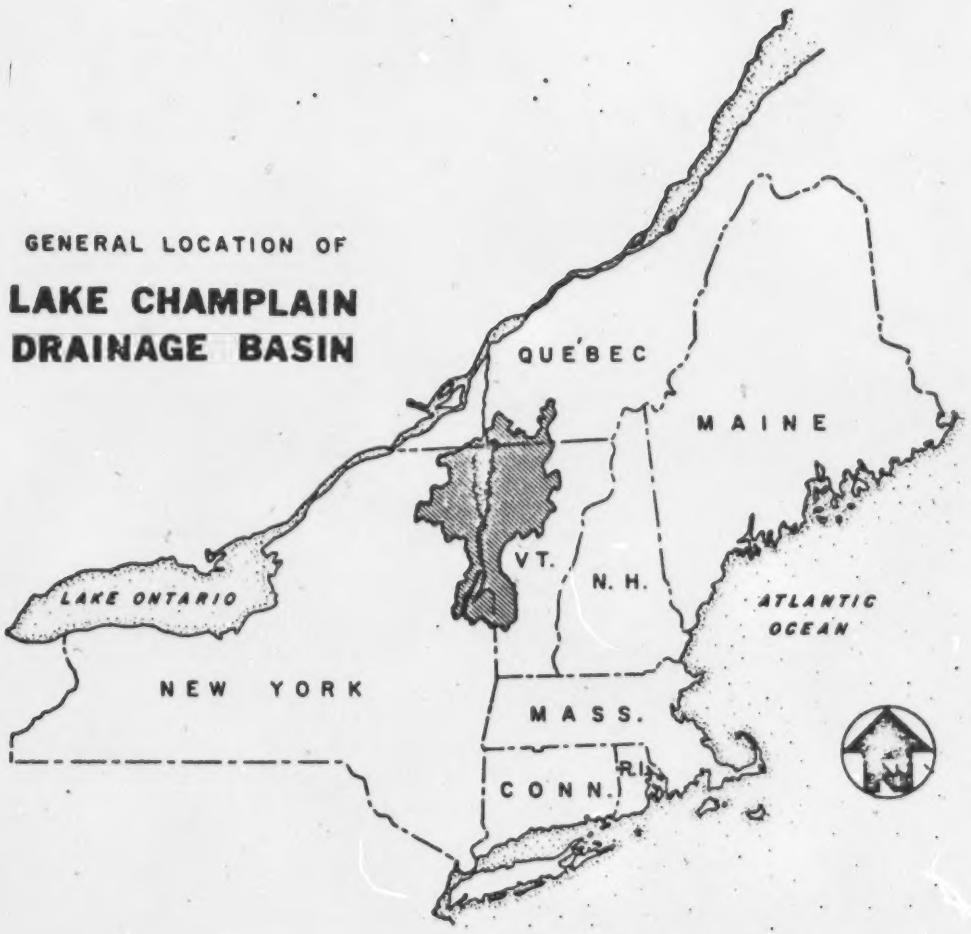

GENERAL LOCATION OF
LAKE CHAMPLAIN
DRAINAGE BASIN
QUEBEC
MAINE
VT.
N. H.
LAKE ONTARIO
ATLANTIC
OCEAN
NEW YORK
MASS.
CONN.
R.I.

Figure 2.

THREE TIER DESIGN

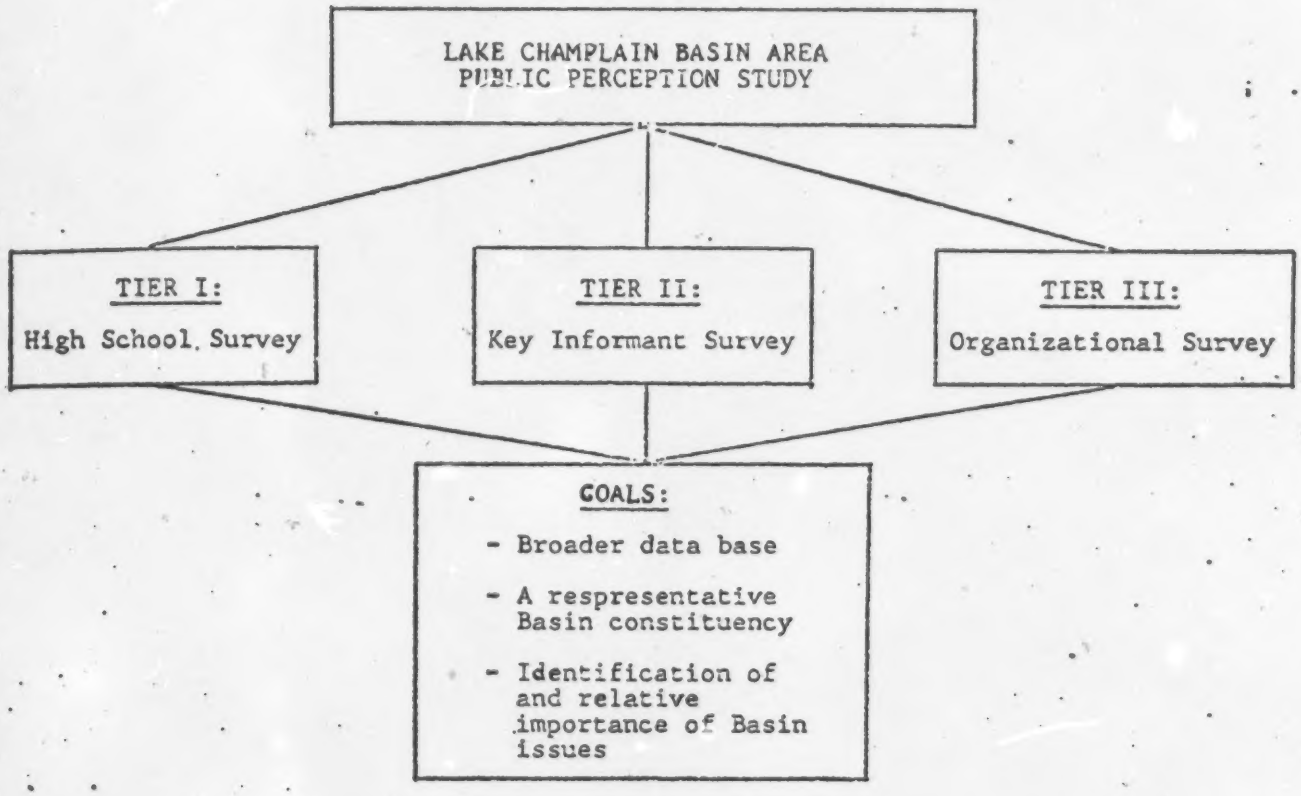


Figure 3.

HIGH SCHOOL SURVEY

OF THE

LAKE CHAMPLAIN BASIN

THE LAKE CHAMPLAIN BASIN STUDY IS CONDUCTING A COMPREHENSIVE SURVEY OF THE ISSUES AND PROBLEMS IN THE LAKE CHAMPLAIN BASIN AREA. YOUR OPINIONS WILL BE EXTREMELY VALUABLE IN HELPING TO DETERMINE THE FUTURE OF THE REGION.

THIS SURVEY HAS TWO PURPOSES:

1. TO FIND OUT WHAT HIGH SCHOOL STUDENTS AND THEIR PARENTS THINK ARE THE MAJOR PROBLEMS AND ISSUES IN THE LAKE CHAMPLAIN BASIN AREA.

2. TO DETERMINE WHICH PROBLEMS AREA RESIDENTS FEEL ARE THE MOST IMPORTANT AND WHAT EXAMPLES ARE EVIDENT OR APPEAR IN THE AREA.

INSTRUCTIONS: PLEASE COMPLETE THIS SURVEY AND RETURN IT TO YOUR TEACHER. ALSO TAKE A COPY OF THE SURVEY HOME TO YOUR PARENTS AND HAVE THEM COMPLETE IT AND DROP IT IN THE MAIL. THANK YOU FOR HELPING!

1. FROM YOUR OWN VIEW, WHAT WOULD YOU SAY ARE THE MOST IMPORTANT PROBLEMS OR ISSUES IN THE LAKE CHAMPLAIN BASIN AREA? (PLACE EACH OF YOUR IDEAS IN THE BLANK AREAS BELOW)

2. TAKING THE PROBLEMS AND ISSUES YOU MENTIONED INTO ACCOUNT ALONG WITH THE SEVEN ITEMS LISTED BELOW - PLEASE RANK ALL OF THE ITEMS SO THAT WHAT YOU CONSIDER THE MOST IMPORTANT AND NEEDING ATTENTION FIRST IS NUMBER 1.

3. FOR THE THREE HIGHEST RANKED PROBLEMS AND ISSUES, PLEASE LIST OR INDICATE ANY EVIDENCE OR EXAMPLES YOU MAY KNOW ABOUT.

ISSUES AND PROBLEMS	RANK	EXAMPLES OR EVIDENCE
YOUR IDEAS		
YOUR IDEAS		
YOUR IDEAS		
LAND USE issues such as DECLINE OF FARMS, SHORELAND DEVELOPMENT, EROSION AND ZONING		
WETLAND issues such as PROTECTION OF FISH AND WILDLIFE HABITATS, GAME MANAGEMENT AREAS AND BOG PRESERVATION.		
WATER POLLUTION issues such as INDUSTRIAL WASTES, SEWAGE, WEED AND ALGAE GROWTH AND RUNOFF FROM FARM LANDS.		
SOCIO-ECONOMIC issues such as JOBS FOR AREA RESIDENTS, PROMISE OF FUTURE FOR YOUNG AND OLD PEOPLE, OPPORTUNITIES FOR DEVELOPMENT OF COMMERCIAL AND PUBLIC SERVICES AND CIRCULATION OF INFORMATION ABOUT THE LAKE.		
RECREATION issues such as ACCESS FOR FISHING AND BOATING, FACILITIES FOR SWIMMING AND PICNICKING AND LITTER DISPOSAL.		
ENERGY issues such as LOCATION OF POWER PLANTS, OIL BARGES AND FUEL STORAGE AND THERMAL POLLUTION		
PLANNING AND MANAGEMENT issues such as MANAGING THE LAKE FOR GREATER PUBLIC USE, CITIZEN INVOLVEMENT IN LAKE PLANNING AND MANAGEMENT, LAKE LEVEL REGULATION, PLANNING; TOO MUCH OR NOT ENOUGH AND LAKE TRANSPORTATION.		

PLEASE TURN OVER

Figure 3 (con't)

WHAT ORGANIZATIONS IN YOUR COMMUNITY OR HIGH SCHOOL DEAL IN ANY WAY WITH THE ISSUES AND PROBLEMS FACING LAKE CHAMPLAIN?

_____

_____

_____

SCHOOL NAME: _____

ARE YOU MALE ___ FEMALE ___

PARENT ___ STUDENT ___

SOPHOMORE ___ JUNIOR ___

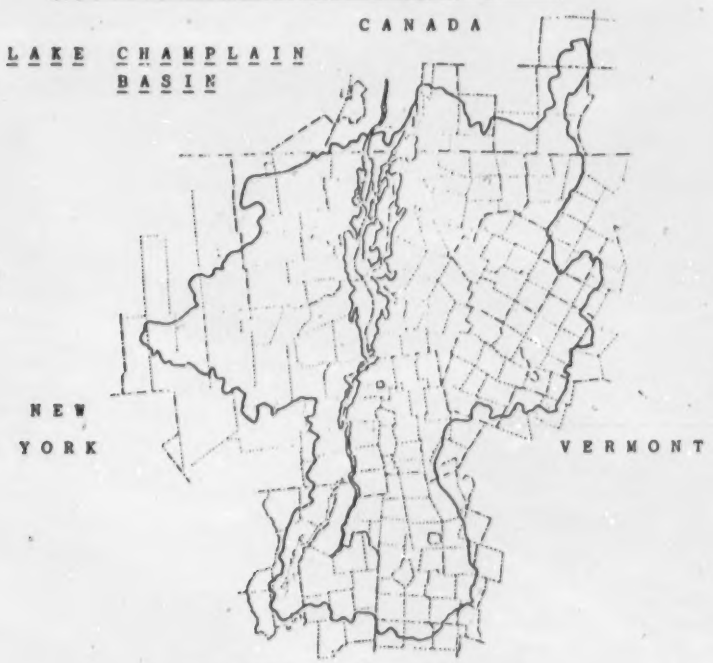
IN WHAT TOWN DO YOU LIVE? _____ TOWN

IF YOU WISH TO RECEIVE SOME FEEDBACK AND THE RESULTS FROM THIS STUDY, PLEASE FILL IN YOUR NAME AND ADDRESS.

_____

_____

_____



---------FOLD HERE---------

LAKE CHAMPLAIN BASIN STUDY
ICE HOUSE - 177 BATTERY STREET
BURLINGTON, VERMONT 05401

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

POSTAGE AND FEES PAID NEW ENGLAND RIVER BASINS COMMISSION

U.S.MAIL

LAKE CHAMPLAIN BASIN STUDY
177 BATTERY STREET
ICE HOUSE
BURLINGTON, VT 05401

Figure 3 (con't)

Key Informant Survey

OFFICE USE:

No. _____

Lake Champlain Basin Study
New England River Basins Commission
Level B Study

Complete this portion before and after interview is conducted:

A. Interviewer Name _____

B. Town/State _____ ☐ VT; ☐ or NY

C. Date _____ D. Time interview begins _____ AM/PM

Time interview ends _____ AM/PM

E. Is Respondent: ☐ Preselected Position or ☐ Referral

F. Estimate Age: ☐ Under 25; ☐ 26-39; ☐ 40-65; ☐ over 65

G. Sex of Respondent ☐ Male; ☐ Female

---

1. Refusal? Why? _____

_____ (Go to 21 below)

2. Years in this town _____

3a. Position _____/_____

b. Years in this Position _____

TO ISSUE MATRIX

20. Ideas for information dissemination _____

_____

_____

21. Referrals (in order given)

_____(position) _____(town) _____(position) _____(town)

_____(position) _____(town) _____(position) _____(town)

Last: Mailing List? ☐ No ☐. Give Post Card

On Interview - Alone? Setting? Cooperation? Other Comments: (go on to reverse side)

_____

_____

_____

INTERVIEW #: _____

ISSUES AND PROBLEMS	RANK	SPECIFIC EXAMPLES	ACTIONS	INDIVIDUAL CONTACTS (positional)	GROUP CONTACTS	FUTURE PROBLEM (S)	ASPECTS OF FUTURE PROBLEM
☐ LAND USE issues such as DECLINE OF FARMS, SHORELAND DEVELOPMENT, EROSION AND ZONING							
☐ WETLAND issues such as PROTECTION OF FISH AND WILDLIFE HABITATS, GAME MANAGEMENT AREAS AND BOG PRESERVATION							
☐ WATER POLLUTION issues such as INDUSTRIAL WASTES, SEWAGE, WEED AND ALGAE GROWTH AND RUNOFF FROM FARM LANDS							
☐ SOCIO-ECONOMIC issues such as JOBS FOR AREA RESIDENTS, PROMISE OF FUTURE FOR YOUNG AND OLD PEOPLE, OPPORTUNITIES FOR DEVELOPMENT OF COMMERCIAL AND PUBLIC SERVICES AND CIRCULATION OF INFORMATION ABOUT THE LAKE							
☐ RECREATION issues such as ACCESS FOR FISHING AND BOATING, FACILITIES FOR SWIMMING AND PICNICKING AND LITTER DISPOSAL							
☐ ENERGY issues such as LOCATION OF POWER PLANTS, OIL BARGES AND FUEL STORAGE AND THERMAL POLLUTION							
☐ PLANNING AND MANAGEMENT issues such as MANAGING THE LAKE FOR GREATER PUBLIC USE, CITIZEN INVOLVEMENT IN LAKE PLANNING AND MANAGEMENT, LAKE LEVEL REGULATION, PLANNING; TOO MUCH OR NOT ENOUGH AND LAKE TRANSPORTATION							
☐ OTHER IDEAS							
☐ OTHER IDEAS							

Figure 3 (con't)

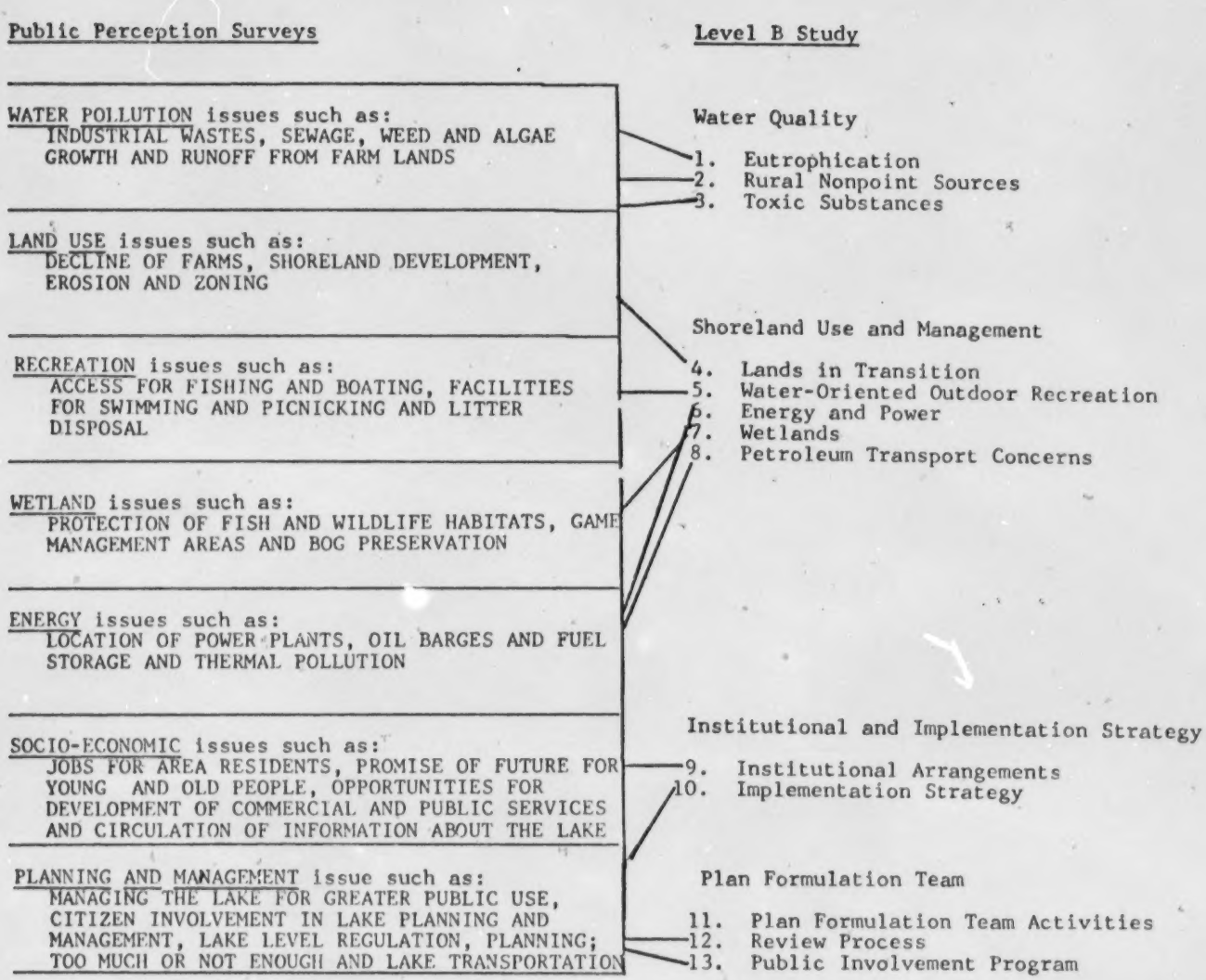

Public Perception Surveys
Level B Study
WATER POLLUTION issues such as:
INDUSTRIAL WASTES, SEWAGE, WEED AND ALGAE GROWTH AND RUNOFF FROM FARM LANDS
Water Quality
1. Eutrophication
2. Rural Nonpoint Sources
3. Toxic Substances
LAND USE issues such as:
DECLINE OF FARMS, SHORELAND DEVELOPMENT, EROSION AND ZONING
Shoreland Use and Management
4. Lands in Transition
RECREATION issues such as:
ACCESS FOR FISHING AND BOATING, FACILITIES FOR SWIMMING AND PICNICKING AND LITTER DISPOSAL
5. Water-Oriented Outdoor Recreation
6. Energy and Power
7. Wetlands
8. Petroleum Transport Concerns
WETLAND issues such as:
PROTECTION OF FISH AND WILDLIFE HABITATS, GAME MANAGEMENT AREAS AND BOG PRESERVATION
ENERGY issues such as:
LOCATION OF POWER PLANTS, OIL BARGES AND FUEL STORAGE AND THERMAL POLLUTION
Institutional and Implementation Strategy
SOCIO-ECONOMIC issues such as:
JOBS FOR AREA RESIDENTS, PROMISE OF FUTURE FOR YOUNG AND OLD PEOPLE, OPPORTUNITIES FOR DEVELOPMENT OF COMMERCIAL AND PUBLIC SERVICES AND CIRCULATION OF INFORMATION ABOUT THE LAKE
9. Institutional Arrangements
10. Implementation Strategy
PLANNING AND MANAGEMENT issue such as:
MANAGING THE LAKE FOR GREATER PUBLIC USE, CITIZEN INVOLVEMENT IN LAKE PLANNING AND MANAGEMENT, LAKE LEVEL REGULATION, PLANNING; TOO MUCH OR NOT ENOUGH AND LAKE TRANSPORTATION
Plan Formulation Team
11. Plan Formulation Team Activities
12. Review Process
13. Public Involvement Program

Figure 4.

COVERAGE OF THE LEVEL B STUDY OBJECTIVES BY THE PUBLIC PERCEPTION SURVEY

Table 1.

TOTAL NUMBER OF HIGH SCHOOLS AND STUDENTS
IN THE LAKE CHAMPLAIN BASIN, SPRING, 1977

	Total Number of Basin High Schools	Total Population of Sophomores and Juniors
New York	31	7,363
Vermont	42	10,666
TOTALS	73	18,029

Table 2.

RESPONSE RATES FROM HIGH SCHOOL SURVEYS BY STATE

	Total Population of Sophomores and Juniors in Cooperating High Schools	Total Number of Sophomores and Juniors Responding	Percent of Students' Response Based Upon Cooperating Schools Only
New York	6,452	2,700	38.6
Vermont	6,558	1,323	20.2
TOTALS	13,010	4,023	30.9

Table 3.

KEY INFORMANTS CONTACTED BY TOWN AND TOWN POPULATION

	1970 Population	Number of Key Informants
NEW YORK STATE		
Clinton County		
Champlain	5,633	10
Chazy	3,393	7
Beekmantown	3,189	7
Plattsburgh	15,881	21
City of Plattsburgh	18,715	16
Peru	4,312	8
Ausable	2,652	7
Essex County		
Chesterfield	2,010	6
Willsboro	1,688	6
Essex	837	5
Westport	1,453	5
Moriah	5,244	9
Crown Point	1,857	6
Ticonderoga	5,839	10
*[1] Lake Placid/Saranac Lake area	10,000	5
Warren County		
[2] Hague	910	5
[2] Bolton	1,589	6
[2] Lake George	2,806	8
[2] Queensbury	14,506	17
[1] City of Glens Falls	17,222	5

[1] Large population centers, non-shoreland
[2] Shoreland towns of Lake George

*Due to an oversight, one extra interview was conducted in this major population center. Rather than discard the information, it was decided to include it in the data analysis.

Table 3 (con't)

	1970 Population	Number of Key Informants
NEW YORK STATE (con't)		
Washington County		
Fort Ann	3,749	7
Whitehall	4,794	9
**Dresden	480	4
**Putnam	579	4
NEW YORK STATE TOTAL		193
VERMONT		
Rutland County		
West Haven	240	4
[1]Benson	583	5
[1]City of Rutland	19,293	4
Addison County		
Orwell	851	5
Shoreham	416	4
Bridport	809	5
Addison	717	5
Panton	416	4
City of Vergennes	2,242	4
Ferrisburg	1,875	6

**Because of the number of refusals, lack of referrals, and the small size of the town of Putnam, it was not possible to contact and interview the proposed number. However, one extra interview conducted in Lake George was substituted for this missing interview.

[1]Large population centers, non-shoreland

Table 3 (con't)

	1970 Population	Number of Key Informants
VERMONT (con't)		
Washington County		
[1]City of Barre	10,209	4
[1]City of Montpelier	8,609	4
Chittenden County		
Charlotte	1,271	5
Shelburne	3,728	8
City of South Burlington	10,032	11
City of Burlington	38,633	30
City of Winooski	7,309	4
Colchester	4,718	9
Milton	4,495	8
Franklin County		
Georgia	1,711	6
St. Albans	3,270	7
[1]City of St. Albans	8,082	4
Swanton	4,622	9
Highgate	1,936	6
Grand Isle County		
Alburg	1,271	5
Isle La Motte	262	4
North Hero	364	4
Grand Isle	809	4
South Hero	868	4
VERMONT TOTAL		182
BASIN TOTAL		375

[1]Large population centers, non-shoreland

Table 4.

NUMBER OF KEY INFORMANTS INTERVIEWED BY STATE AND BY EXPRESSED DESIRE TO BE PLACED ON A MAILING LIST FOR RESULTS

	Completed Interviews	Interview Refusals	YES to recieve Result Information	NO	no response to question
New York	193	15	103	73	18
Vermont	182	12	119	36	27
Basin Totals	375	27	222	108	45

Table 5.

Occupations of Key Informants by States

Position	New York	Vermont	Total
General Store Operator	27	47	74
Bartender	27	11	38
Gas Station Attendent	19	18	37
Diner/Restaurant Employee	11	17	28
Liquor Store Operator	17	4	21
Pharmacist	11	6	17
Hardware Store Operator	8	5	13
Post Person	11	1	12
Gift Shop Operator	8	4	12
Barber	6	2	8
Motel Operator	2	5	7
Sales Person	-	5	5
Newspaper Reporter	4	-	4
Town Clerk	4	-	4
Appliance Store Operator	2	2	4
Insurance Broker	4	-	4
Book Store Clerk	1	2	3
Variety Store Owner	-	3	3
Florist	-	3	3
Real Estate Broker	3	-	3
Clothing Store Clerk	3	-	3
Newstand Operator	3	-	3
Beauty Shop Operator	2	1	3
Electronics Store Clerk	-	2	2
Sporting Goods Clerk	-	2	2
Marina Proprietor	-	2	2
Market Clerk	-	2	2
Bank Manager	2	-	2
Restaurant Proprietor	2	-	2
Carpet Store Operator	1	1	2
Pharmacy Clerk	1	1	2
Librarian	1	1	2
Fish Market Operator	1	-	1

Table 5. (con't)

Position	New York	Vermont	Total
Shoe Store Clerk	1	-	1
Taxi Cab Dispatcher	1	-	1
Furniture Store Clerk	1	-	1
Print Shop Operator	1	-	1
Attorney	1	-	1
Funeral Director	1	-	1
Community Development Center Head	1	-	1
Parking Lot Attendant	1	-	1
Ticket Sales Person	1	-	1
Mini-Putt Golf Operator	1	-	1
Figure Salon Employee	1	-	1
Radio Manager	1	-	1
Nursery Owner	-	1	1
Farmer	-	1	1
Farm Supply Clerk	-	1	1
Discount Store Clerk	-	1	1
Transport Sales Clerk	-	1	1
Natural Food Sales Clerk	-	1	1
Music Salesman	-	1	1
Grocery Store Manager	-	1	1
Jewelry Salesperson	-	1	1
Bait Shop Owner	-	1	1
Book Store Proprietor	-	1	1
Carpenter	-	1	1
Secretary	-	1	1
Local Businessman	-	1	1
Unemployed individual	-	1	1
Butcher	-	1	1
Vegetable Stand Owner	-	1	1
Youth Counselor	-	1	1
Health Center Volunteer	-	1	1
Art Gallery Curator	-	1	1
Orchard Worker	-	1	1
Camp Director	-	1	1
Bakery Employee	-	1	1

Table 5. (con't)

Position	New York	Vermont	Total
Auto Supply Clerk	-	1	1
Dry Cleaner	-	1	1
Pawn Shop Proprietor	-	1	1
Garden Shop Clerk	-	1	1
Pool Supplier	-	1	1
Cinema Clerk	-	1	1
Variety Store Clerk	-	1	1
Unknown position	-	1	1
TOTALS	193	182	375

Table 6.

Numbers and Percent of Key Informants by Sex, by State and by Percent of General Population

	New York Key Informants	% of Key Informants	% of General Population (4-county area	Vermont Key Informants	% of Key Informants	% of General Population (5-county area)	TOTALS (Numbers)
Male	123	63.7	48.7	114	62.6	47.3	237
Female	69	35.8	51.3	62	34.1	52.7	131
Not available	1	.5	-	6	3.3	-	7
TOTALS (Numbers)	193			182			375

Table 7.

Numbers and Percents of Key Informants by Age and State Compared to the General Population

Age in Years	New York Key Informant	% of Key Informants	% of General Population (4-county area)	Vermont Key Informants	% of Key Informants	% of General Population (5-county area)
20-24	26	13.5	12.1	41	22.5	13.9
25-39	60	31.1	27.1	74	40.7	26.9
40-64	97	50.3	39.2	57	31.3	36.3
Over 64	9	4.7	13.5	1	.5	17.7
Not available	1	.5	-	9	4.9	-

Table 8.

Number and Percent of Key Informants by Length of Community Residence and by State

Number of Years	New York	Percent	Vermont	Percent	Total	Percent
Less than 10	37	19.1	52	28.5	89	23.7
11-20	25	12.5	33	18.1	58	15.4
21-30	32	16.5	40	21.9	72	19.2
31-40	36	18.6	23	12.6	59	15.7
41-50	36	18.6	18	9.8	54	14.4
51-60	13	6.7	12	6.5	25	6.6
61-70	8	4.1	2	1.0	10	2.6
70^{+}	1	.51	0		1	.26
Not Available	5	2.5	2	1.0	7	1.8
TOTALS	193		182		375	

Table 9.

NAMES AND NUMBERS OF ORGANIZATIONAL RESPONSES
BY TYPE OF ORGANIZATION AND BY STATE

Organization	New York	Vermont
Federal	No response (0)	USDA - Green Mountain National Forest (1)
State Agencies	New York State Dept. of Agriculture and Markets Division of State Planning New York State Dept. of Environmental Conservation New York State Dept. of Public Service: Office of Environmental Planning (5)	Vermont Dept. of Water Resources Agency of Environmental Conservation (2 responses) Agency of Environmental Conservation - Air and Solid Waste Agency of Environmental Conservation - Office of the State Geologist Vermont 208 Planning Vermont Dept. of Agriculture Vermont Natural Resources Council (8)
Private Business	International Paper Highland Forests, Keeseville Niagara Mohawk Adirondack Forestry (4)	Wilcox Community Cottages and Golf Course (1)
Special Interest Groups	Willsboro Seasonal Property Dunes Association Associated Industries of New York State Glens Falls Area League of Women Voters Essex County Historical Society (4)	Vermont Federation of Business and Professional Womens Club Vermont Retail Association Nature Conservancy V.P.I.R.G. Vermont Counicl of the Humanities and Public Issues Benson Fish and Game Club Lake Dunmore-Fern Lake Association Lake Champlain Committee (2 responses) Addison County Chamber of Commerce (9)
Local Government	Town of Peru Town of Putnam Town of Willsboro Chazy Planning Board Peru Planning Board Warren County Planning Board (2 responses) Wasington County Planning Board Essex County Board of Supervisors Hamilton County Board of Supervisors Washington County Board of Supervisors Clinton County Health Department (13)	Middlebury Board of Selectman Monkton Planning Commission City of Winooski Lake Champlain Islands Chamber of Commerce South Hero Planning Commission (6)
Regional Planning Commission	Lake George-Lake Champlain Regional Planning Commission (1)	Addison County Regional Planning Commission Chittenden County Regional Planning Commission Rutland County Regional Planning Commission (2 responses) (5)

Table 10.

COMPARATIVE RESULTS OF THE ISSUE RANKINGS FOR THE HIGH SCHOOL SURVEY AND THE KEY INFORMANT SURVEY

Ranking	Issues Identified by High School Students in New York			Issues Identified by High School Students in Vermont			Issues Identified by High School Students in the Lake Champlain Basin Area		
	Priority Listing	Rank Score (Weighted)	% of Total	Priority Listing	Rank Score (Weighted)	% of Total	Priority Listing	Rank Score (Weighted)	% of Total
1	Water Pollution	14,046	22	Water Pollution	8,004	24	Water Pollution	22,050	22
2	Socio-economic	10,663	17	Wetlands	4,907	14	Socio-economic	15,164	16
3	Wetlands	8,337	13	Energy	4,740	14	Wetlands	13,244	14
4	Energy	7,938	13	Land Use	4,504	13	Energy	12,678	13
5	Land Use	7,596	12	Socio-economic	4,501	13	Land Use	12,100	13
6	Recreation	7,250	12	Recreation	4,184	12	Recreation	11,434	12
7	Planning and Management	6,653	11	Planning and Management	3,412	10	Planning and Management	10,065	10

Ranking	Issues Identified in the Key Informant Survey in New York Towns and Municipalities			Issues Identified in the Key Informant Survey in Vermont Towns and Municipalities			Issues Identified in the Key Informant Survey in the Lake Champlain Basin Area		
	Priority Listing	Rank Score (Weighted)	% of Total	Priority Listing	Rank Score (Weighted)	% of Total	Priority Listing	Rank Score (Weighted)	% of Total
1	Socio-economic	420	40	Socio-economic	305	29	Socio-economic	725	35
2	Water Pollution	181	18	Water Pollution	267	25	Water Pollution	448	21
3	Planning and Management	141	14	Energy	125	12	Land Use	241	12
4	Land Use	119	12	Land Use	122	12	Planning and Management	239	11
5	Recreation	80	8	Planning and Management	98	9	Energy	189	9
6	Energy	64	6	Recreation	72	7	Recreation	158	8
7	Wetlands	25	2	Wetlands	66	6	Wetlands	91	4

Table 10. (continued)

COMPARATIVE RESULTS OF ISSUE RANKINGS FOR THE KEY INFORMANT AND THE ORGANIZATIONAL SURVEY

Ranking	Issues Identified by Key Informants in New York Towns and Municipalities			Issues Identified by Key Informants in Vermont Towns and Municipalities			Issues Identified by Key Informants in the Lake Champlain Basin Area		
	Priority Listing	Rank Score (Weighted)	% of Total	Priority Listing	Rank Score (Weighted)	% of Total	Priority Listing	Rank Score (Weighted)	% of Total
1	Socio-economic	420	40	Socio-economic	305	29	Socio-economic	725	35
2	Water Pollution	181	18	Water Pollution	267	25	Water Pollution	448	21
3	Planning and Management	141	14	Energy	125	12	Land Use	241	12
4	Land Use	119	12	Land Use	122	12	Planning and Management	239	11
5	Recreation	80	8	Planning and Management	98	9	Energy	189	9
6	Energy	64	6	Recreation	72	7	Recreation	158	8
7	Wetlands	25	2	Wetlands	66	6	Wetlands	91	4

Ranking	Issues Identified by Organizational Leaders in New York			Issues Identified by Organizational Leaders in Vermont			Issues Identified by Organizational Leaders in the Lake Champlain Basin Area		
	Priority Listing	Rank Score (Weighted)	% of Total	Priority Listing	Rank Score (Weighted)	% of Total	Priority Listing	Rank Score (Weighted)	% of Total
1	Land Use	86	24	Water Pollution	122	30	Water Pollution	207	27
2	Water Pollution	85	24	Land Use	80	20	Land Use	166	22
3	Socio-economic	84	23	Planning and Management	50	12	Socio-economic	122	16
4	Planning and Management	39	11	Wetlands	46	11	Planning and Management	89	12
5	Recreation	26	7	Energy	39	10	Wetlands	64	8
6	Energy	22	6	Socio-economic	38	9	Energy	61	8
7	Wetlands	18	5	Recreation	30	8	Recreation	56	7

Table 11.

ISSUE RANKING BY TIER, STATE, AND BASIN

	Rank						
	First	Second	Third	Fourth	Fifth	Sixth	Seventh
TIER I							
New York	water pollution	socio-economic	wetlands	energy	land use	recreation	planning/management
Vermont	water pollution	wetlands	energy	land use	socio-economic	recreation	planning/management
BASIN	WATER POLLUTION	SOCIO-ECONOMIC	WETLANDS	ENERGY	LAND USE	RECREATION	PLANNING/MANAGEMENT
TIER II							
New York	socio-economic	water pollution	planning/management	land use	recreation	energy	wetlands
Vermont	socio-economic	water pollution	energy	land use	planning/management	recreation	wetlands
BASIN	SOCIO-ECONOMIC	WATER POLLUTION	LAND USE	PLANNING/MANAGEMENT	ENERGY	RECREATION	WETLANDS
TIER III							
New York	land use	water pollution	socio-economic	planning/management	recreation	energy	wetlands
Vermont	water pollution	land use	planning/management	wetlands	energy	socio-economic	recreation
BASIN	WATER POLLUTION	LAND USE	SOCIO-ECONOMIC	PLANNING/MANAGEMENT	WETLANDS	ENERGY	RECREATION

The ranking score was computed in reverse order, i.e., multiplying all number one ranked items by seven, number two ranked items by six, number three ranked items by five, etc.

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